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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/525,132	02/16/2005	Jean-Michel Lagrange	FR 020088	1955
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EXAMINER				
MACKOWEY, ANTHONY M				
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/525,132

Applicant(s)

LAGRANGE ET AL.

Examiner

ANTHONY MACKOWEY

Art Unit

2624

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 March 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 February 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-8508)
- Paper No(s)/Mail Date _____

- 4) ☐ Interview Summary (PTO-413)
- Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Response to Arguments

Applicant's arguments, see page 6, filed March 6, 2008, with respect to the objection to the specification has not having headings have been fully considered and are persuasive. The objection to the specification has been withdrawn.

However, although applicant has amended the Abstract not all instances of legal phraseology have been removed. The Abstract still recites "said" in lines 7, 8 and 12. Therefore, the objection to the Abstract is maintained.

Applicant's arguments, see page 6, filed March 6, 2008, with respect to the objection to claims 2-4 have been fully considered and are persuasive. The objection to claims 2-4 has been withdrawn.

Applicant's arguments filed March 6, with regard to the disclosure and teachings of Murthy have been fully considered but they are not persuasive.

While the examiner agrees with applicant in that Murthy does not disclose ultrasonic imaging, Applicant's arguments with respect to this element have been considered but are moot in view of the new ground(s) of rejection. Examiner had previously presented a combination of Murthy and Entrekin (which disclosed an ultrasonic imaging system) in the rejection of claims 4-9 in the Non-Final Office Action mailed December 6, 2007.

Applicant further submits Murthy fails to disclose "seeking contours representing an interface." The portions of Murthy cited by the examiner (col. 4, line 1—col. 5, line 59 and col. 7, lines 8-18) eliminating background and image regions having negligible or no diagnostic

content, essentially "seeking the contours" of the relevant image regions. As Murthy seeks to align only the relevant diagnostic image regions while avoiding image alignment of images including background (col. 7, lines 8-18), the identified image regions (non-background, diagnostically relevant) are construed as representing an interface on the images to be combined.

Specification

Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

The abstract of the disclosure is objected to because it includes legal phraseology ("said") throughout. Correction is required. See MPEP § 608.01(b).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of US 6,101,238 to Murthy et al. (cited in Applicant's IDS, hereafter referred to as "Murthy") and WO 01/69282 to Entrekin et al. (cited in Applicant's IDS, hereafter referred to as "Entrekin").

Regarding claim 1, Murthy discloses a method for combining images of the same object (col. 2, lines 23-35) including the steps of:

seeking contours representing an interface on the images to be combined, said search step being intended to define interest areas close to said representative contours (col. 4, line 1 - col. 5, line 59; col. 7, lines 8-18, *background detection and elimination*),

analyzing interest areas, said analysis step being intended to allocate weights to the points in said interest areas and to the points corresponding to said interest areas on the various images (col. 5, lines 60 – col. 6, line 44; col. 7, lines 42-48, *emphasis field extraction*),

constructing a combination image, a point on the combination image corresponding to a point on at least one interest area being obtained from a weighting of the corresponding points on the images to be combined according to the weights allocated in said analysis step (col. 10, lines 15-25, *compound image generator combining pixels using weighting from emphasis fields*).

Murthy discloses the device is used for combining x-ray images but is silent with regard to the methods use in combining ultrasonic images.

Entrekin discloses an ultrasonic diagnostic imaging system and method that generates a compound image. It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Murthy and Entrekin such that method taught

by Murthy is used to combine ultrasonic images obtained from an ultrasonic imaging device as disclosed by Entrekin. This combination would predictably result in substantially improved accuracy and efficiency of the image compositing/compounding/combining of the ultrasonic images of the ultrasonic image diagnostic system taught by Entrekin (Murthy col. 2, lines 12-20). It has been held that “[t]he combination of familiar elements according to known methods is likely to be obvious when it does not more than yield predictable results.” *KSR.*, 127 S. Ct. at 1739, 82USPQ2d at 1395 (2007) (citing *Graham*, 383 U.S. at 12)

Regarding claim 2, the combination of Murthy and Entrekin further discloses analyzing comprises a step of evaluating similarity of the interest areas on the ultrasonic images to be combined, the weights being allocated to the various points in said interest areas and to their corresponding points according to said similarity (Murthy, col. 7, line 42 – col. 8, line 14).

Regarding claim 3, the combination of Murthy and Entrekin further discloses analyzing comprises a step of estimating the contrast within at least two interest areas present and similar on two images, the weights being allocated to the various points in said interest areas according to said estimated contrast (Murthy, col. 10, lines 26-40).

Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Murthy, Entrekin and US 5,920,657 as applied to claim 2 above, in further view of US 5,920,657 to Bender et al. (previously cited, hereafter referred to as “Bender”).

Regarding claim 4, Murthy is silent with regard to at least two images to be combined having different resolutions and is therefore silent with regard to a step of evaluating these resolutions with at least two interest areas present and similar on two said images, the weights being allocated to the various points in said interest areas on said two images according to said resolutions.

Entrekin teaches an ultrasonic diagnostic imaging system and method that generates a compound image from images of different resolutions in which the image data has been weighted prior to combining (Fig. 1; page 3, line 19 - page 5, line 33). Entrekin does not explicitly disclose the images are of different resolutions. However, the background section of Applicant's specification discussing the prior art of WO 01/69282 to Entrekin recites, "Images with various resolutions are then combined since the 2D or 3D image of a localized reflector (that is to say the function of the response of the imaging system to a pulse) is highly anisotropic." (page 2, lines 7-10). Thus it is admitted prior art that WO 01/69282 to Entrekin teaches images of different resolutions being combined. Entrekin is silent with regard to the details of how the images are weighted.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Murthy and Entrekin such that method taught by Murthy is used to determine the weighting and combine ultrasonic images having different resolutions obtained from an ultrasonic imaging device as taught by Entrekin. This combination would predictably result in substantially improved accuracy and efficiency of the image compositing/compounding/combining of the ultrasonic images of different resolutions of the ultrasonic image diagnostic system taught by Entrekin (Murthy col. 2, lines 12-20). It has been

held that “[t]he combination of familiar elements according to known methods is likely to be obvious when it does not more than yield predictable results.” *KSR.*, 127 S. Ct. at 1739, 82USPQ2d at 1395 (2007) (citing *Graham*, 383 U.S. at 12)

The combination of Murthy and Entrekin described above does not disclose evaluating the resolutions within at least two interest areas present and similar on two said images, the weights being allocated to the various points in said interest areas on said two images according to said resolutions. Bender teaches a system and method in which a plurality of images of different resolutions are combined by evaluating the resolutions and weighting the images based on the resolution of the image (col. 17, lines 37-53).

It would have been obvious to one of ordinary skill in art at the time the invention was made to combine the teachings of Murthy, Entrekin and Bender such that the method taught by the combination of Murthy and Entrekin described above is modified to include evaluating the resolutions and allocating weights according to the resolutions, evaluating the resolutions within at least two interest areas present and similar on said two images, the weights being allocated to the various points in said interest areas on said two image according to said resolutions. This combination would predictably result preventing noticeable edges demarking the boundaries between the images from appearing (Bender, col. 17, lines 37-53) thereby improving appearance of the combined image. It has been held that “[t]he combination of familiar elements according to known methods is likely to be obvious when it does not more than yield predictable results.” *KSR.*, 127 S. Ct. at 1739, 82USPQ2d at 1395 (2007) (citing *Graham*, 383 U.S. at 12)

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ANTHONY MACKOWEY whose telephone number is (571)272-7425. The examiner can normally be reached on M-F 9:00-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Bella can be reached on (571) 272-7778. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Matthew C Bella/
Supervisory Patent Examiner, Art Unit
2624

AM
5/26/08